

Creek, New England. This is the second discovery of fossil insects in Australia, and the specimens show the impressions of larvae and pupae of *Ephemera* or "May-fly."

26 Nov. 1884.—... On the larvae and larva cases of some Australian *aphrophoridae*. By F. Ratte, M.E. This paper describes the larval state of some small species of rhynchota closely allied to the genus *Aphrophora* and belonging probably to the genus *Ptyelus*. They are as yet imperfectly known: but the description of their larva-cases and of some of the larvae discloses a feature probably quite new to the science of entomology. These cases, unlike those of insects generally, are true shells, containing at least three-fourths of carbonate of lime, and resembling in shape some fossil and recent serpulæ, some being conical, others serpuliform, or helicoidal. The conical shells are fixed on the branches of some species of eucalyptus, the mouth turned upwards, the larva being placed in it with the head downwards. It introduces its suctorial apparatus into the bark of the stem, sucks the sap of the tree, and emits from time to time, by its anus, drops of clear water. This property of emitting water is possessed by all the family.

The president exhibited four specimens of the shell-like covering of a species of *Phryganæa*. These are built up entirely of small round nodules of brown iron ore, fastened together by a silky web. They were obtained on the north end of New Caledonia, by Dr. Storer, in a creek flowing over rocks composed of iron ore.

31 Dec. 1884.—... Mr. E. P. Ramsay, F.R.S.E., exhibited for Mr. E. G. W. Palmer a native bees' nest which had been obtained in the neighborhood of Smithfield. For the last seven years it had been suspended from a branch of a pear tree in Mr. Palmer's garden, and a quart of honey had often been obtained from it, but during the last winter a caterpillar formed its cocoon in the only aperture and so effectually closed it that all the bees were killed.—Selected from *Zoologischer anzeiger*.

## OBSERVATIONS ON DECAPITATED SILKWORM MOTHS.

N. Passerini finds that decapitated silkworm moths live a long time, but are torpid, move with difficulty and only under direct external excitation, and often disconnect themselves if they are paired. They live longer than those which have not been decapitated; often living for more than a month, whereas normally the males die in six or seven days after they have issued from the chrysalis. The females live even longer than the males, but do not lay eggs. In one case three or four eggs were obtained from a female which had been decapitated while coupled with a male whose head had been left on, but although these eggs appeared to be fecundated, they did not hatch in the following year. The moths did not couple after both had been decapitated, but if the female alone was decapitated copulation did sometimes take place. If they were decapitated while coupled they very often separated; but sometimes they remained connected, without moving, until they died. If the male only was decapitated while coupled, they separated; but this was not the case if the female only was decapitated. This is readily understood, since the male holds the female by a special genital armature. Death does not follow decapitation instantly because the principal nervous centre does not reside in the head. Life is prolonged because the vital force of the insect is not consumed in the procreation of new individuals. The author could not find a satisfactory explanation for the failure of the decapitated females to lay their eggs, since the female normally lays all or nearly all her eggs even if they are not fecundated, but he thinks that possibly the ganglia of the oesophageal ring operate, or at least regulate the emission of eggs in this insect.—Summarized from "Passerini, N. Esperienze sulla decapitazione delle farfalle del baco da seta" (Bull. soc. entom. ital., 31 Dec. 1884, an. 16, p. 285-286).